WHAT IS CLAIMED IS:

1. A method to rapidly change a power output level of a steam turbine comprising:

a. operating the steam turbine at a continuous power output level including regulating a steam temperature to a constant steam temperature set point;

b. receiving a demand for a rapid change in the power output level of the steam turbine;

c. adjusting the steam temperature set point to a temporary temperature excursion limit selected to achieve the demand for the rapid power change;

d. regulating the steam temperature in the turbine to the temporary temperature excursion limit;

e. operating the turbine at a temporary power output level achieved using the temporary excursion limit;

f. generating power by the turbine using steam regulated to the temporary temperature limit, and

g. changing the temperature used to regulate the turbine after a predetermined period.

2. A method as in claim 1 wherein the steam temperature is a temperature at an inlet to the steam turbine.

3. A method as in claim 1 wherein the steam temperature is a temperature in a heat recovery and steam generator which provides steam to the steam turbine.

4. A method as in claim 1 wherein the demand for a rapid change in the power output level is a demand for a rapid increase in the power output level; the temporary temperature excursion limit is elevated above the continuous steam temperature set point, and the temporary power output level is higher than the continuous power output level.

5. A method as in claim 1 wherein the steam temperature is a temperature in a superheater which provides superheated steam to the steam turbine.

6. A method as in claim 1 wherein there is a predetermined period of time setting limits.

7. A method as in claim 1 wherein the change in the temperature in step (g) is to return to the constant steam temperature setpoint.

8. A method as in claim 1 wherein the steam temperature in step (a) is regulated to match the temporary excursion limit in step (d).

9. A method to rapidly change a power output level of a steam turbine comprising:

a. operating the steam turbine at a continuous power output level including regulating a steam temperature to a constant steam temperature set point;

b. receiving a demand for a rapid change in the power output level of the steam turbine;

c. adjusting the steam temperature set point to a temporary temperature excursion limit selected to achieve the demand for the rapid power change;

d. regulating the steam temperature in the turbine to the temporary temperature excursion limit;

e. operating the turbine at a temporary power output level achieved using the temporary excursion limit;

f. generating power by the turbine using steam regulated to the temporary temperature limit;

g. changing the temperature used to regulate the turbine after a predetermined period;

h. promptly after receiving the demand for a rapid power change, increasing a fuel flow to a source of heat production applied to a heat recovery and steam generator (HRSG) which provides steam to the steam turbine;

i. increasing an amount of steam provided by the HRSG to the turbine after the fuel flow increase, and

j. after step (g), continuing an increase in power output by the steam turbine previously achieved by regulating to the temperature excursion limit by applying the increase in the amount of steam provided to the turbine.

10. A method as in claim 9 wherein the steam temperature is a temperature at an inlet to the steam turbine.

11. A method as in claim 9 wherein the demand for a rapid change in the power output level is a demand for a rapid increase in the power output level; the temporary temperature excursion limit is elevated above the continuous steam temperature set point, and the temporary power output level is higher than the continuous power output level.

12. A method as in claim 9 wherein the steam temperature is a temperature in a superheater which provides superheated steam to the steam turbine.

13. A method as in claim 9 wherein there is a predetermined period of time setting limits.

14. A method as in claim 9 wherein the change in the temperature in step (g) is to return to the constant steam temperature setpoint.

15. A method as in claim 9 wherein the steam temperature in step (a) is regulated to match the temporary excursion limit in step (d).

16. A steam turbine system comprising:

a steam turbine having a steam inlet and steam outlet;

a steam circuit having an discharge port coupled to the steam inlet of the steam turbine and an inlet port coupled to the steam outlet, and said steam circuit further comprising a steam generation device for generating steam to flow to the steam inlet of the turbine;

at least one adjustable steam valve in said steam circuit, wherein said valve regulates a condition of steam in the circuit in response to a steam valve actuation control command;

a controller receiving control commands and sensor input regarding steam conditions in the circuit, wherein said controller further comprising an electronically stored control program which, in response to a demand for a rapid power change, (i) generates the steam valve actuation control command to adjust the steam valve in order to elevate a steam temperature in the circuit to a temporary temperature excursion limit, and (ii) maintains the steam temperature at the temporary temperature excursion limit for no longer than a predetermined period.

17. A steam turbine system as in claim 16 wherein the steam generation device is a heat recovery and steam generator.

18. A steam turbine system as in claim 16 further comprising an attemperator water flow input to the steam circuit and said adjustable steam valve regulates the attemperator water flow into the circuit, wherein said

controller in adjusting the steam valve reduces the attemperator water flow into the circuit.

19. A control system for a steam turbine, wherein the steam turbine includes:

a steam inlet and steam outlet, a steam circuit having an discharge port coupled to the steam inlet of the steam turbine and an inlet port coupled to the steam outlet, and said steam circuit further comprising a steam generation device for generating steam to flow to the steam inlet of the turbine,

at least one adjustable steam valve in said steam circuit, wherein said valve regulates a condition of steam in the circuit in response to a steam valve actuation control command, and

wherein said control system comprises:

a controller receiving control commands and sensor input regarding steam conditions in the circuit, wherein said controller further comprising an electronically stored control program which, in response to a demand for a rapid power change, (i) generates the steam valve actuation control command to adjust the steam valve in order to elevate a steam temperature in the circuit to a temporary temperature excursion limit, and (ii) maintains the steam temperature at the temporary temperature excursion limit for no longer than a predetermined period.

20. A control system as in claim 19 wherein the steam generation device is a heat recovery and steam generator.

21. A control system as in claim 19 further comprising an attemperator water flow input to the steam circuit and said adjustable steam valve regulates the attemperator water flow into the circuit, wherein said controller in adjusting the steam valve reduces the attemperator water flow into the circuit.